

REMARKS

Applicants respectfully request entry of the remarks submitted herein. Claims 1-16 and 20 are currently pending and stand rejected. Reconsideration of the pending application is respectfully requested.

The 35 U.S.C. §103 Rejections

Claims 1-16 and 20 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Idaszak (U.S. Pat. No. 4,021,927) (hereinafter “the ‘927 patent”) in view of Vezzani (EP 0710670 A1) (hereinafter “the ‘670 patent”). Specifically, the Examiner alleged that it would have been obvious to modify the reactor of the ‘927 patent to contain a motor with blades that convey starch in the manner disclosed by the ‘670 patent because “the agitation applied by a rotor within the reactor favors the completion of the modification reaction.” Office Action at page 3. This rejection is respectfully traversed.

Obviousness under §103 requires consideration of the factors set forth in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), including an analysis of the scope and content of the prior art and the differences between the claimed subject matter and the prior art. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007). Given the differences between the present claims and the cited art, the cited combination of references does not render the present claims obvious.

The ‘927 patent teaches an agitator zone and series of heated, tubular reactors that improve reaction efficiency by increasing the surface area. The ‘927 patent also teaches that fluidization may be improved by providing a countercurrent of air throughout the reaction vessel. The ‘670 patent teaches a continuous chemical modification process where a starch powder and reagent are introduced simultaneously into a reactor having a rotating screw. The ‘670 patent also teaches increasing the reaction surface area using centrifugal forces, which creates a fine, dynamic liquid layer in which the starch and reagent interact. On the other hand, the present claims are directed toward introducing a continuous flow of starch substrate, gas, and one or more reagents into a reactor having a tubular body with one or a plurality of rotating blades under the recited conditions.

Contrary to the Examiner's allegations, a person having ordinary skill in the art would not have been prompted to modify the reactor of the '927 patent to contain a motor with blades that convey starch in the manner disclosed by the '670 patent. A skilled artisan would have readily understood that adding the countercurrent of air flow taught by the '927 patent would disrupt the "thin, dynamic layer" taught by the '670 patent, thereby reducing or eliminating any reaction efficiency achieved by the centrifugal force created by the rotating blades. Thus, methods of the '927 patent and the '670 patent are not compatible with each other. According to MPEP §2143.01(VI), "if the proposed modification or combination of the prior art would change the principal of operation of the prior art being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious" (*In re Ratti*, 270 F.2d 810 (CCPA 1959)). In the present case, the use of a motor with blades would change the principal of operation of the cited references and would have discouraged anyone from combining the respective methods of conveying starch.

For at least these reasons, a person of ordinary skill in the art reading the combination of the '927 patent with the '670 patent would not have been prompted to make the presently claimed methods of preparing highly soluble starch or modifying starch or starch derivatives. As such, the present claims are patentable over the combination of references.

Accordingly, Applicants respectfully request that the rejection of claims 1-16 and 20 under 35 U.S.C. §103(a) be withdrawn.

CONCLUSION

Applicants respectfully submit that claims 1-16 and 20 are in condition for allowance, which action is requested.

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Page : 7 of 7

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Respectfully submitted,

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